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ABSTRACT

This study analyzed institutional factors that significantly affect cohort default rates at historically black colleges and universities (HBCUs) and assessed the potential for reducing these rates. It has been hypothesized that the HBCUs most successful in lowering student cohort default rates are those that have also succeeded in increasing student retention rates. Swail's (1995) conceptual framework for student retention, which focuses on barriers and issues facing minority students, was used to identify and assess factors that might contribute to reducing cohort default rates. A mixed time-series/cross-sectional model examined the effectiveness of institutional strategies designed to reduce cohort default rates; data was analyzed for financial aid, recruitment and admissions, curriculum and instruction, academic services, and student services at 80 HBCUs for the period 1987-95. Analysis revealed that increases in some non-academic components (grants and student services) of an institution's budget are statistically associated with increases in cohort default rates. However, increases in instructional services are associated with lower cohort default rates, with such increases having their biggest effect at relatively low levels of spending. The study concludes that, although the data explain about 40 percent of the variation in cohort default rates, student-based characteristics and other factors account for the majority of the variation. (Contains 12 references.) (CH)

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The Sallie Mae Education Institute (SMEI) is a non-profit corporation that focuses its attention on issues in higher education finance, especially student and family ability to pay for postsecondary education. SMEI conducts research and publishes findings, works with higher education leaders to offer creative solutions to problems, and furnishes objective analyses to policy-makers and other interested parties.

M O N O G R A P H S E R I E S

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F O R E W O R D

As college prices have risen, so has student borrowing to pay for them. These growth patterns have led to concerns about borrower defaults, as not all students successfully complete their education programs and, consequently, some default on their loans. Defaults cost the taxpayers, the government, and the lenders. They also cost the student borrowers a great deal of money in lost credit and related negative effects on their lives. Thus, there is great interest in studying the causes of defaults and using this research to reduce default costs and probabilities. The literature of student financial aid abounds with research reports on defaulter characteristics and how they differ from student borrowers who do not default, accounts of successful actions taken by loan program administrators to avert defaults, and distinguishing characteristics of institutions whose students have above average default rates.

The literature contains very little discussion of the relationships between what institutions do, particularly how they allocate their resources among manifold activities, and the effects their acts might have on student borrowers' repayment experiences. This study employs sophisticated statistical methods to assess the effects of institutional spending (resource allocation) in such areas as instruction, academic support services, student services, and student financial aid, on students' subsequent cohort default rates. The subjects of this research are colleges whose students have experienced above-average default rates in federal loan programs, the Historically Black Colleges and Universities. These colleges were chosen as subjects for two reasons. First, there are great individual differences in their students' default rates, the resources they have to apply to general and education expenditures, and in the ways they divide funds among various program activities. Second, some of these colleges are in danger of losing institutional eligibility to participate in the federal student loan programs because of their students' higher default rates. So the researchers hoped that their analyses would help the colleges to address defaults and the root cause of defaults, student attrition, more effectively.

The Sallie Mae Education Institute is pleased to publish this important study. We believe it offers institutions guidance in how they might better allocate resources to reduce their students' default rates. And we believe it offers student default researchers ideas and hypotheses to explore when they conduct their next studies. There is still much to learn.

Jerry S. Davis
President

Sallie Mae Education Institute
November 1999

During the latter half of the 1980s, annual costs to the federal government for defaults in the nation's largest student loan program, the Federal Family Education Loan Program (FFELP), began to soar. Between 1984 and 1986, annual default costs nearly doubled, rising from about $712 million to over $1.3 billion, before reaching a high of $3.2 billion in federal fiscal year (FFY) 1991 (Conner, Saab, and Cicmanec, 1997). Congress, the federal government, postsecondary education institutions, lenders, and all FFELP participants became concerned about the threat default costs represented to continued support of student loans. During those years, and in the years hence, these parties cooperated in many ways to help reduce default costs and suppress default probabilities. One of those strategies was to use borrower cohort default rates to restrict institutional participation in federal student aid programs.

Unfortunately, America's Historically Black Colleges and Universities (HBCUs) have much higher cohort default rates than the national average. At the time of the 1998 Higher Education Act amendments, about one-third of the HBCUs had cohort default rates above the legislated threshold rate. Therefore, many of those colleges were in danger of losing eligibility to participate in the federal loan programs. A few remain in such danger today.

This study focuses on an analysis of the factors that significantly affect the cohort default rates at HBCUs, and on the potential for reducing these rates. It is hoped that findings from the analysis will help pave the way for further analysis, and ultimately develop a better understanding of which institutional practices have greater success in reducing the higher default rates for these colleges and universities.

Background

Three discoveries contributed to the implementation of institutional cohort default rates as eligibility criteria. First, the data on default payments showed that a disproportionate number of defaulting borrowers had attended proprietary (private, for-profit) business, trade, and technical schools (Merisotis, 1988; General Accounting Office, 1989). Second, it was discovered that many defaulting borrowers spent only a year or two in postsecondary education and dropped out before completing their academic programs (Beanblossom and Rodriguez, 1989). It was concluded that colleges and schools were at least partially responsible for borrower defaults. The logic was as follows: If schools enrolled only students who had the ability to benefit from their curricula, if schools offered programs and services that helped retain admitted students until completion of their education goals, and if schools helped their students find satisfactory employment after graduation, then student borrowers would be much less likely to default on their loans. Congress reasoned that if the evidence indicated that the schools and colleges could not do these things, then their students should no longer be eligible for federal student loans.

A third discovery, that the vast majority of defaults occur in the first year or two after borrowers leave school or college (Davis and Knapp, 1990), led Congress to consider their students' cohort default rates as primary evidence that certain postsecondary institutions could not successfully serve borrowers. The term "cohort default rate" was first defined in the Omnibus Budget Reconciliation Act of 1990 (P.L. 101-508) as the percentage of students at a particular institution who enter repayment during a fiscal year who default before the end of the following fiscal year.

For example, here is the formula for the most recent cohort default rate (CDR) available, the one for FFY 1997:

$$\frac{\text{The Number of Students Who Entered Repayment in FFY 1997 and Defaulted Before the End of FFY 1998 (Numerator)}}{\text{The Number of Students Who Entered Repayment in FFY 1997 (Denominator)}} \times 100 = \text{CDR}$$

Using such a simple measure as evidence of success with students as a criterion for continued participation in the federal student loan programs is not without complications. First, many factors that are beyond the control of a school or college contribute to defaults on student loans. For example, a borrower's unwillingness to seek any job or a job that earns enough to meet loan payments, or a borrower's decision to spend earnings on consumer goods rather than loan payments, can lead to defaults. Changes in the economy or local job market can inhibit borrowers' employment opportunities and subsequent ability to repay their student loans.

Second, many institutions are committed to the national goal of providing access to postsecondary education and training to all who might benefit from it. However, it is not always easy for such institutions to determine which applicants will benefit. Sometimes institutions that are committed to the access goal admit and enroll students who are unable to meet their curricular requirements. Such students may drop out and, because their education and training were not successful, may have difficulty finding jobs. If these students were borrowers, they may default on their loans. Other "open door" institutions, such as community colleges, that are committed to offering all students the opportunity to try to succeed in postsecondary education will probably enroll some who will fail, drop out, and subsequently have difficulty repaying a student loan.

Third, the mission of some institutions is to serve populations of students whose socioeconomic statuses, previous education and training, and lack of preparedness make it difficult for all of them to succeed, regardless of what the institutions do for them. Thus their student borrowers very likely will have higher default rates than will the student borrowers at elite, selective colleges. Only one of the HBCUs in the study sample is selective in its admissions practices.

Congress was faced with choosing a specific cohort default rate which would not discriminate against colleges and schools that were trying to achieve laudable goals and sometimes failed to do so, and yet a rate which would restrict institutions who were doing disservice to their student borrowers. Congress decided that the threshold for loss of institutional eligibility would be a cohort default rate of 35 percent for FFY 1991 and FFY 1992, 30 percent for FFY 1993, and 25 percent for any succeeding year.

Because of their special historical mission, and the characteristics of the students they serve, the HBCUs were exempted from these limitations until

July 1, 1993. The Higher Education Amendments Act of 1992 extended that exemption to July 1, 1998. (The loss of eligibility sanctions also does not apply to tribally controlled community colleges and Navajo community colleges.) The current law mandates that a school with an official cohort default rate of 25 percent or greater for the three most recent federal fiscal years (in this case, FFY 1995, FFY 1996, and FFY 1997) lose eligibility to participate in the FFELP and the Direct Loan Program [Higher Education Act, Section 435(a)(2)]. Such a school becomes ineligible to participate in the FFELP and/or Direct Loan program for the current and two succeeding fiscal years, unless the institution successfully appeals its loss of eligibility.

Were it not for the exemption, when this research was begun 18 months ago, fourteen HBCUs would have lost their eligibility to participate in the federal student loan programs because their cohort default rates for FFY 1993, FFY 1994, and FFY 1995 each exceeded 25 percent (General Accounting Office, 1998). Another nineteen institutions were in some potential danger of losing eligibility because their cohort default rates exceeded 25 percent in one or two of the three most recent fiscal years. Still another 13 institutions had FFY 1995 cohort default rates in excess of the Department of Education's "cautionary" level of 20 percent.

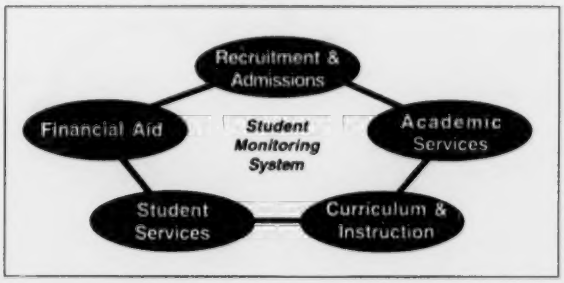
Many HBCUs have achieved success in lowering their cohort default rates. For example, nineteen HBCUs whose FFY 1988, FFY 1989, and FFY 1990 rates exceeded the statutory threshold of 25 percent have fallen below the threshold for the most current cohort years (General Accounting Office, 1998). However, many have not done as well as Congress initially hoped they would. Their students continue to default at a much higher rate than students at most other types of postsecondary institutions. The aggregate 1995 student loan cohort default rate for HBCUs was 18.5 percent; the rate for non-HBCUs was only 7.8 percent (General Accounting Office, 1998).

Congress and the federal government remain concerned about cutting federal budget costs. Due to this concern, the recently-enacted Higher Education Amendments of 1998 (P.L. 105-244) contains a provision which extended the exemption for HBCUs for just one year (to July 1, 1999). After this date, all HBCUs and tribally-controlled colleges that have had cohort default rates of 25 percent or higher for the past three federal fiscal years must submit default management plans to the U.S. Secretary of Education in order to remain eligible for participation. Thirteen HBCUs were required to submit these plans. There is reason to worry that these HBCUs will no longer be able to provide federal loans to their students if their default rates remain high.

That most HBCUs have successfully lowered their students' cohort default rates indicates that they changed their policies, programs, and practices to achieve that goal effectively. Research has shown that only 5 percent of all student borrowers who receive their degrees default on their FFELP loans (Davis, 1996). For this reason, it was hypothesized that the HBCUs that have been most successful in lowering their students' cohort default rates were those that were also successful in increasing their student retention rates. Put another way, if their cohort default rates went down, then the colleges' retention (and graduation) rates must have gone up.

Swail's Conceptual Framework for Student Retention (Swail, 1995) was used to help identify and assess which factors might have contributed to success in reducing cohort default rates. In doing so, it was assumed that factors positively related to improvements in retention are positively related to improvements in default rates. The research goal was to identify and quantify primary factors that are statistically associated with cohort default rate reductions. The intention is that identifying these factors

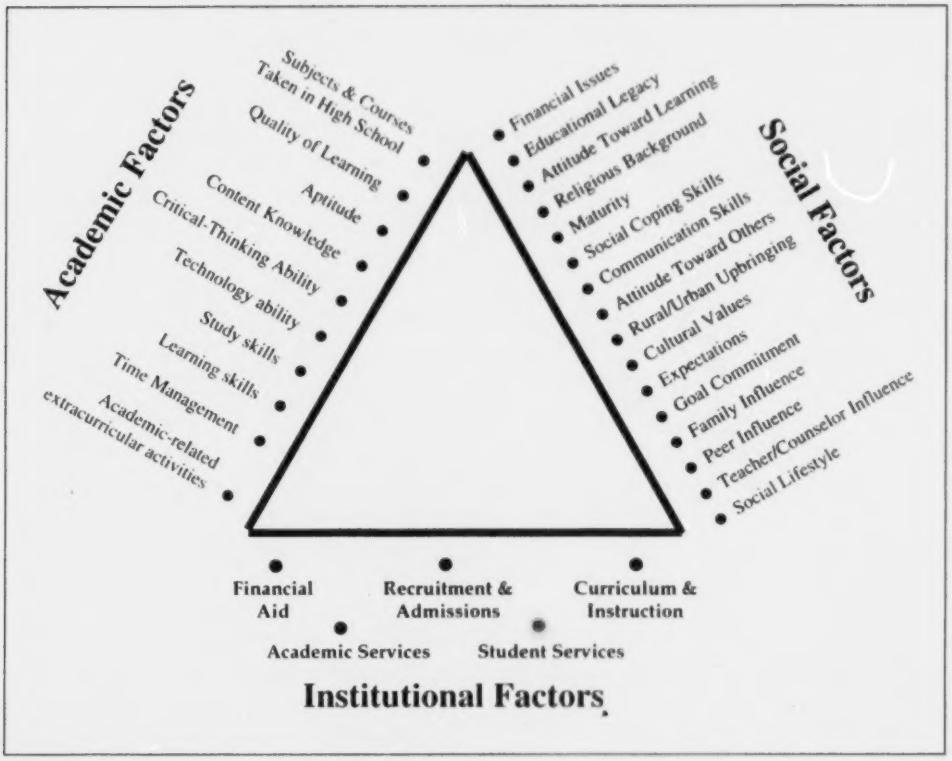
Figure 1. Five components of Student Retention Framework (Swail, 1995)



at colleges that have successfully cut their cohort default rates will lead to potential replication by other relatively unsuccessful institutions.

For example, if it is determined that a certain base level of per student expenditures on academic support services is necessary to achieve reductions in cohort default rates, then colleges must be able to achieve that level to expect to meet the federal criteria. Or, for another example, if it is determined that an increase in expenditures on student support services is more closely related to a reduction in cohort

Figure 2.
Factors impacting upon the geometric model of student persistence



default rates than an increase in expenditures on academic support services, then HBCUs will know better how to target limited resources to reach their default reduction goals. It is also intended that the research findings will help federal policymakers understand whether it is realistic to expect every single HBCU to reach the target cohort default rates for all schools participating in the FFELP and Direct Loan program.

The Student Retention Model

Swail's Conceptual Framework for Student Retention (1995) focuses on the barriers and issues facing minority students at HBCUs and other minority-serving institutions. Originated from a synthesis of previous retention research, specific retention strategies were then formed into a five-part framework. A validation process by way of delphi technique resulted in the final framework, whose components are presented in Appendix A. The five basic components include student services, academic services, curriculum and instruction, financial aid, and admissions and recruitment.

Swail's framework pulls together many of the widely-held tenets of minority student retention, previously illustrated through landmark studies by Tinto (1975), Astin (1977), Beal and Noel (1980), Bean (1986), and others. While some may argue the specifics of the models developed by these and other researchers over the years, all subscribe to a similar philosophy about the problems facing disadvantaged students in higher education and the basic strategies to increase student retention.

Figure 1 illustrates how the five components of the conceptual framework act as a basic foundation for student retention at a college or university. While the geometric frame simplifies the nature of the student experience in higher education, it does offer a visual interpretation of how students and institutions interact.

Figure 2 shows the relationship between the institutional factors or practices of the college and the academic and social skills students bring with them to college. If one conceptualizes the triangle as the student college experience, one can think abstractly about the various factors that may impact that experience. Academic preparation, readiness for college, maturity, social awareness, ability to get along, and the myriad of other developmental issues all have some impact on a student's ability to persist in school. While the factors presented in Figure 2 are not exhaustive, they do provide some idea of what students bring with them from high school and/or the workforce.

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The ultimate responsibility of the institution is to provide a quality education for its students. Through each of the five components of the framework, institutions have an opportunity to build a support system to help students stay in school and receive a degree. For example, an institution may provide specialized orientations (student services) to help freshman students acclimate to their new surroundings, or provide tutoring and study assistance opportunities (academic services) to assist the academic development of their students. (See Appendix A for details of the original framework).

One challenge facing HBCUs is the set of issues students bring with them to campus. It was mentioned earlier in this paper that the mission of many HBCUs is to serve populations of students whose backgrounds may make it difficult to succeed. Generally speaking, the academic preparation of students attending HBCUs is not commensurate with their peers at other institutions. These students, on average, have not taken the same rigorous course work in high school, have not been exposed to high-level education, have not always had the support of family and community, and lack some of the general skills required to excel in postsecondary education (e.g., study, time management, etc.). Additionally, research suggests that these students also have a difficult time making the social adjustment to postsecondary education.

These factors alone provide a formidable barrier to success for many students. However, academics represent only part of the challenge. Many of the students attending HBCUs require financial aid to attend. How students and their families pay for college varies widely depending on their academic ability, current income status, and available savings or other financial resources. Low-income students may be eligible for Pell Grants, but these provide only modest support at most colleges. The remainder is often made up by loans, many of which are subsidized and offered through the federal government. In 1996, about 53 percent of undergraduate students at HBCUs received Stafford Loans of $3,629, on average. While average tuition costs at HBCUs are lower than national averages, many students will have accumulated loan debt in excess of $10,000.[1]

For graduates of HBCUs, repaying their loans is not particularly difficult. Most will find jobs that will allow them to begin repayment soon after graduation. And while no one likes to repay loans, a $10,000 debt is not a formidable barrier to most graduates. The bigger problem is with students who leave college before completing their degree programs. These students do not have the advantages afforded bachelor's degree recipients, including increased skill, knowledge, and a degree to flaunt around the job market. In a society that rewards credentialism, the degree itself—regardless of skill in many cases—is valued by employers. Unfortunately, students without degrees will have a much more difficult time finding a job (let alone a decent paying job) than those with degrees. Still, the loan debt persists, and many of these students face a difficult situation: choosing between paying rent or paying their student loan. Understandably, repaying student loans quickly becomes of secondary importance.

It was hypothesized that the answer to decreasing institutional cohort default rates lies in increasing student persistence to a degree. While persistence rates are affected by admissions policies, what institutions do with their students once on campus may be the only direct strategy of retaining students from year-to-year.

Research Design and Methodology

A mixed time-series/cross sectional model was used to examine the effectiveness of various institutional strategies designed to reduce cohort default rates. The pooled model contained data for 80 HBCUs[2] over the entire period for which cohort default rates have been calculated by the U.S. Department of Education (1987 - 1995).[3] The model itself can be thought of as a series of cross-sectional models over time describing changes in both cohort default rates and the institutional strategies designed to reduce them. The financial and enrollment data for the HBCUs came from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) annual finance and fall enrollment surveys, the undergraduate admissions selectivity data came from the 1998 *Peterson's Guide to Four-Year Colleges*, and the cohort default rates were provided by the U.S. Department of Education.

Table 1
Variable Definitions and their Sources

Variable Name	Definition	Source
CDF	Cohort Default Rate	U.S. Department of Education
ISPCT	Percentage of Total Educational and General Expenditures Devoted to Instructional Services	IPEDS
ISFTE	Expenditures on Instructional Services Per Full-Time Equivalent Student	IPEDS
ASPCT	Percentage of Total Educational and General Expenditures Devoted to Academic Services	IPEDS
ASFTE	Expenditures on Academic Services Per Full-Time Equivalent Student	IPEDS
SSPCT	Percentage of Total Educational and General Expenditures Devoted to Student Services	IPEDS
SSFTE	Expenditures on Student Services Per Full-Time Equivalent Student	IPEDS
AIDPCT	Percentage of Total Educational and General Expenditures Devoted to Financial Aid	IPEDS
AIDFTE	Expenditures on Financial Aid Per Full-Time Equivalent Student	IPEDS
SELECT	Categorical Variable Describing the Selectivity of the Institutional Admissions Policy (Noncompetitive, Minimally Difficult, Moderately Difficult, Very Difficult, Most Difficult)	Peterson's Guide

For each of the five strategic areas identified in Swail's retention framework, there were at least at least two conceptual ways in which each strategy could be measured. For those strategies best represented through institutional expenditures, a "budgetary shares" and a "spending per FTE" framework was developed. In this manner, four expenditure-based strategies (academic services, student services, instruction, and financial aid in the form of grants) could all be measured as either their respective share of total educational and general expenditures in a given year, or in terms of annual expenditures per full-time equivalent student. To test the inferential robustness of the theory, estimates were developed under both frameworks. For the fifth and final type of strategy, institutional selectivity, an ordinal measure describing the selectivity of the institutions' admissions policies based on the SAT scores of admitted freshmen was developed. The precise definitions of the variables, along with their sources, are presented in Table 1.

These measures were then used to first estimate the effects of each one of the institutional strategies independent of the other strategies, beginning by using ordinary least squares to linearly regress each one of the measures against the institutional cohort default rates. However, since it takes time for these institutional changes to effect an institution's cohort default rate, lag structures of between one and four years were tested, to represent the length of time it might take for a change to work its way through the system.

After measuring the magnitude of the individual linear effects, tests were conducted for non-linearities in the estimated effects. Since in particular, many of

Table 2
Elasticities, Lag Structures, and Explained Variation for the Independent Variables in the Linear Budgetary Shares Model

	Elasticity[4]	Significance Level	Optimal Lag Structure	Range of Explained Variation (R^2)
Academic Support	-.393	1%	1 Year	1% - 2%
Student Services	.543	1%	4 Years	1% - 3%
Instructional	-.412	1%	4 Years	12% - 14%
Grants	.528	1%	4 Years	19% - 21%
Admissions	-.147	1%	4 Years	12% - 14%

the expenditure-based strategies are hypothesized to have their greatest effects at low levels of spending, several functional forms designed to capture this reciprocal effect were tested. Together, the linear and non-linear effects were then used to estimate both the relative size of the effects produced by each institutional strategy, as well as to identify the most efficient lag structure for each strategy.

In the final part of the analysis, the individual effects were combined into a more general model describing all five of the institutional strategies. To determine the optimal lag structure and specification for the final "budgetary shares" and "expenditure per FTE" models, the results from the first two parts of the analysis were used to sequentially narrow the range of acceptable lag structures and specifications. This sequencing was done until it created a set of models that produced the same inferences and explained the same variation in cohort default rates. From among these few models, ones with conformable lag structures were selected to allow comparisons of the results of the two conceptual models.

Results

The first part of the analysis involved estimating the effects of each one of the institutional strategies independent of the other strategies. Each one of the "budgetary shares" and "spending per FTE" variables was linearly regressed against the cohort default rates. The elasticities, significance levels, lag structures, and explained variation for both models are presented in Tables 2 and 3.

Examination of these tables shows that three of

Table 3
Elasticities, Lag Structures, and Explained Variation for the Independent Variables in the Linear Expenditure per FTE Model

	Elasticity	Significance Level	Optimal Lag Structure	Range of Explained Variation (R^2)
Academic Support	-.119	1%	1 Year	3% - 5%
Student Services	.040	Insignificant	4 Years	0% - 0%
Instructional	-.294	1%	4 Years	14% - 15%
Grants	.253	1%	4 Years	8% - 11%
Admissions	-.147	1%	4 Years	12% - 14%

Table 4
Elasticities, Lag Structures, and Explained Variation for the Independent Variables in the Non-Linear Budgetary Shares Model

	Elasticity	Significance Level	Optimal Lag Structure	Range of Explained Variation (R^2)
Academic Support	-.090	1%	1 Year	2% - 3%
Student Services	.075	1%	4 Years	0% - 0%
Instructional	-.385	1%	1 Year	13% - 19%
Grants	.313	1%	4 Years	15% - 16%
Admissions	-.147	1%	4 Years	12% - 14%

the institutional strategies led to decreases in the institution's cohort default rates, and the other two led to increases or had no effect at all. The three strategies that led to decreases involved tightening up admissions policies, increasing spending on academic services, and increasing spending on instructional services. For all three of these institutional strategies, the effect sizes are modest, and take from between one and four years to work their way through the system.

For example, a 1 percent increase in the share of the budget devoted to instructional services results in a decrease of slightly less than half a percentage point (.41) in the institution's cohort default rate in four years. A 1 percent increase in instructional services per FTE results in a smaller decrease in the institution's cohort default rate (.29). To a large extent, the same holds true for academic expenditures: a 1 percent increase in the share of the budget devoted to academic services results in a decrease of slightly less than half a percentage point (.39) in the institution's cohort default rate in one year, while a similar increase in academic expenditures per FTE results in a smaller decrease in the institution's cohort default rate over the same time period (.12). For both models, tightening up admissions policies by admitting more "select" students results in a decrease in the institution's cohort default rate by .15 percent over four years.

Two strategies result in *higher* cohort default rates.

Table 5
Nonlinear Effect Sizes, Lag Structures, and Explained Variation For the Independent Variables in the Expenditure per FTE Model

	Elasticity	Significance Level	Optimal Lag Structure	Range of Explained Variation (R^2)
Academic Support	-.084	1%	3 Years	3% - 5%
Student Services	.039	1%	3 Years	1% - 2%
Instructional	-.236	1%	1 Year	9% - 17%
Grants	.234	1%	4 Years	6% - 9%
Admissions	-.147	1%	4 Years	12% - 14%

Table 6
Specifications, Elasticities, Significance Levels, and Lag Structures for The Independent Variables in the Full Budgetary Shares Model (R^2 = .41)

	Specification	Elasticity	Significance Level	Lag Structure
Academic Support	Reciprocal	.032	Insignificant	1 Year
Student Services	Linear	.426	1%	4 Years
Instructional	Reciprocal	-.269	1%	1 Year
Grants	Linear	.341	1%	4 Years
Admissions	Linear	-.001	1%	4 Years

These are increasing expenditures on student services and financial aid, both of which take four years to work through the system and, in the "budgetary shares" model, result in slightly greater than half a point increases in an institution's cohort default rate (.54 for student services and .53 for financial aid). However, in the "expenditure per FTE" model, there is no effect associated with increases in student service expenditures, and a more modest increase in cohort default rates is associated with a 1 percent increase in expenditures on grants per FTE (.25).

Although these results are only preliminary, one possible explanation for the positive, and possibly counter-intuitive, effect of financial aid may be that increasing expenditures on grants encourages more marginal students, who are heavily dependent on loans as well as grants, to enroll and then subsequently drop out. As for the positive results associated with student services, perhaps increases in this share of the budget are spent on non-academic services that actually decrease the student's chances of completing their degree (e.g., expenditures on fraternities and sororities, or for purely social events).

In the next stage of the analysis, non-linearities were tested for in ways that institutional strategies worked to change the institution's cohort default rates. This was done because many of the expenditure-based strategies were hypothesized to have their greatest effect at low levels of spending, and this sort of reciprocal effect can only be captured through the use of non-linear functional forms. This information is presented in Tables 4 and 5, and suggests that, for several strategies, the non-linear approach explains more variation in cohort default rates than does the linear specification. For example, in the "budgetary shares" model, the reciprocal specification associated

Table 7
Specifications, Elasticities, Significance Levels, and Lag Structures for The Independent Variables in the Full Expenditures per FTE Model (R^2 = .36)

	Specification	Elasticity	Significance Level	Lag Structure
Academic Support	Reciprocal	.038	5%	1 Year
Student Services	Linear	.070	10%	4 Years
Instructional	Reciprocal	-.258	1%	1 Year
Grants	Linear	.248	1%	4 Years
Admissions	Linear	-.001	1%	4 Years

with instructional expenditures explains between 14 and 19 percent of the variation in cohort default rates, while the linear specification explains only between 12 and 14 percent. Similarly, the reciprocal specification for academic support explains between 2 and 3 percent of the variation in cohort default rates, compared with between 1 and 2 percent for the linear specification.

In the "expenditures per FTE" model, the non-linear approach represented an improvement over linear specifications for several of the institutional strategies. In particular, the reciprocal specification associated with instructional expenditures, academic support expenditures, and student service expenditures all produced models that explained more of the variation in cohort default rates than did their linear counterparts. Although the student services strategy seems to have little overall effect on cohort default rates, increases in both academic support expenditures and instructional expenditures seem to have their greatest effect at low levels. This suggests that institutions that spend relatively little in academic support and instructional areas should be able to see significant reductions in their cohort default rates by increasing funding in them.

Taken together, the results of the first two parts of the analysis suggest that the strongest effects, both in terms of explained variation and size of effects, are for spending on grants and instructional services. However, they operate in different directions. A 1 percent increase in the share of the budget devoted to grants causes about half a percentage point increase in an institution's cohort default rate (.53). A similar increase in the share of the budget devoted to instructional expenditures produces slightly less than half a percentage point decrease in an institution's cohort default rate (.39).

Although expenditures in both academic services and student services are associated with fairly large effect sizes, they explain a relatively small amount of the variation in cohort default rates. The institutional selectivity measure explains a relatively large amount of variation in cohort default rates, but its effect size is quite small. As such, it appears that increased spending on instructional services, especially at low levels, seems to offer the best chance for HBCUs to reduce their cohort default rates effectively.

However, before making any conclusive statements about the size of the effects associated with the five institutional strategies, it is appropriate to combine these effects into a more general model describing all five of the institutional strategies. As was noted above, the results from the first two parts of the analysis were used to narrow the range of lag structures and specifications to arrive at final "budgetary shares" and "expenditure per FTE" models. These models have the same lag structures and specifications and are presented in Tables 6 and 7.

Examination of these tables yields some interesting and surprising findings. Although spending on both grants and instructional services still yields the strongest and most robust effects, their magnitude is diminished when all of the other institutional strategies are statistically controlled for. Specifically, a 1 percent increase in the share of the budget devoted to grants increases an institution's cohort default rate by about a third of a percent (.34). At the same time, a 1 percent increase in the share of the budget devoted to instructional services decreases an institution's cohort default rate by slightly less than a third of a percent (.27). As expected, similar increases in expenditures per FTE for both of these strategies produce smaller changes than those associated with the 1 percent increase in the share of the budget -- specifically, .25 percent for grants and .26 percent for instructional services. However, from a policy perspective, increasing spending on instructional services produces a declining cohort default rate within a year, while increasing spending on grants takes four years to produce an increase in their cohort default rate.

The results for the three other institutional strategies are mixed. For example, although increases in admissions selectivity are responsible for significant decreases in cohort default rates, the size of the effect is so small as to be of no practical use to institutions struggling with high cohort default rates. Put another way, tightening up admissions criteria is unlikely to significantly cut default rates. When expenditures on academic support are included in the full model, the effect size washes out. This suggests that other institutional strategies are explaining the same thing. Finally, the results on student service expenditures are mixed, but they do suggest that increases in this type of spending may indeed lead to increases in cohort default rates four years down the line.

Conclusions and Policy Implications

For several year some HBCUs have been struggling with persistently high cohort default rates. Despite the fact that many have been successful in reducing their default rates below the 25 percent threshold that applies to most other types of institutions, some HBCUs remain in danger of losing their eligibility to participate in the federal student loan programs. Since students who drop out of college have been shown to default at much higher rates than those who persist, this paper has examined several retention strategies available to HBCUs to see what effects they might have on lowering the institutions' cohort default rates.

Through the use of both a "budgetary shares" and "expenditure per FTE" model, the effectiveness of several institutional strategies designed to increase retention were examined to see what effect, if any, they may have on an institution's cohort default rates. Although the results were mixed, several important facts surfaced.

First, increases in such non-academic components of an institution's budget as grants and student services are statistically associated with increases in the cohort default rates. These findings suggest that increases in grant spending may actually encourage marginal students heavily dependent on grants and loans to enroll and then subsequently drop out, and that spending increases on student services may help produce a campus climate that actually reduces students' chances of completing their degrees.

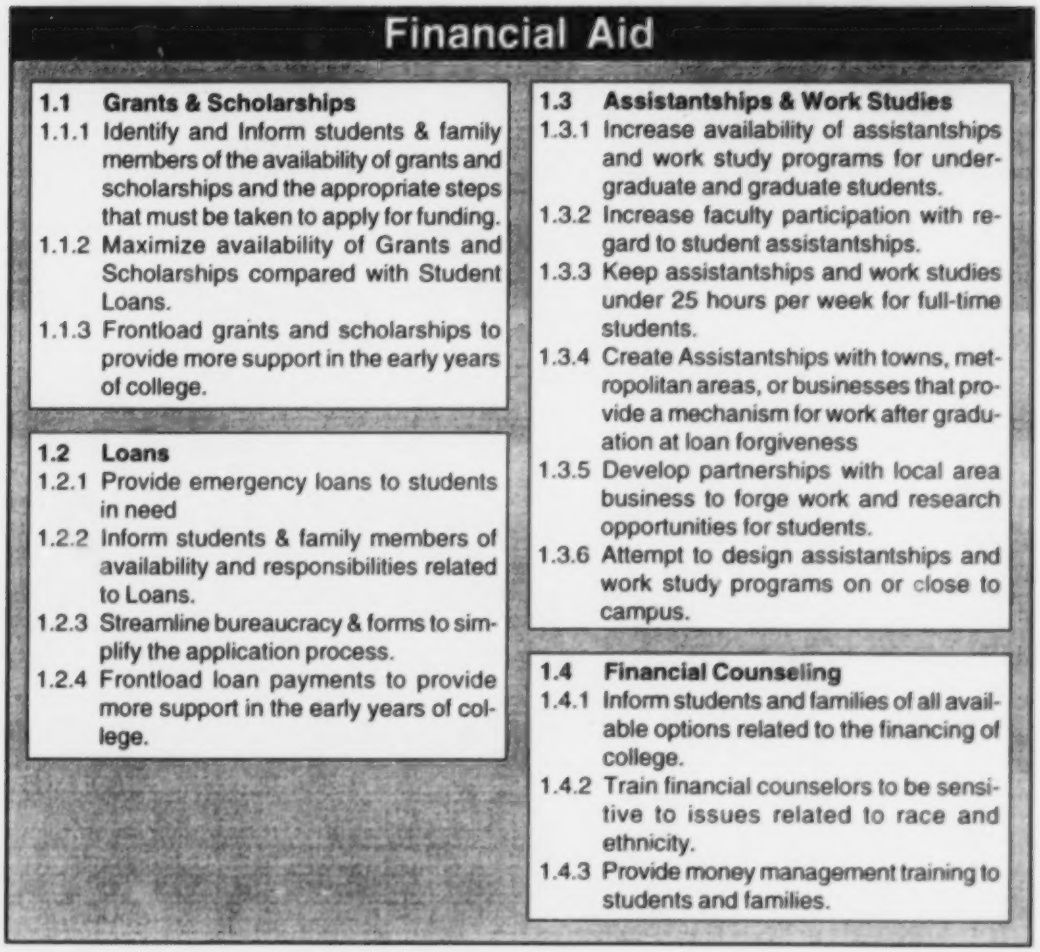
Second, increases in at least one academic component of an institution's budget, instructional services, are associated with lower cohort default rates, which suggests that spending more on instructional services may help motivate students to persist in degree completion. Furthermore, since increases in spending on instructional services have their biggest effect on cohort default rates at relatively low levels of spending, the HBCU's that are struggling with high cohort default rates while devoting a relatively small share of their budgets to instructional services are strongly urged to increase spending in this area.

Finally, the institutional strategies examined in this study together explained about 40 percent of the variation in cohort default rates. This suggests that institutional decision-making about allocation of resources among different alternative functions affects cohort default rates. But student-based characteristics and other factors, not to mention chance, are left to explain the majority of the variation in cohort default rates.

Taken together, the results of this study should provide new insights for many HBCUs struggling with stubbornly high cohort default rates. Although only one institutional strategy, increasing expenditures on instructional services, was especially effective for both increasing retention and reducing cohort default rates, the fact that the biggest "bang" for the instructional services "buck" comes at low levels of instructional services spending should help many HBCUs reduce their cohort default rates.

For policymaking purposes, it is important to note that all the strategies available to HBCUs to increase retention explain less than half of the variation in HBCU cohort default rates. This suggests that many HBCUs may be doing all they can under their present circumstances to keep their students in school and to handle their default rates. Therefore, it seems that Congress would be well advised to allow these institutions to continue to participate in the federal student loan programs, allowing them to serve their students.

APPENDIX A-1
Institutional Components for Student Persistence


Financial Aid
1.1 Grants & Scholarships
1.1.1 Identify and Inform students & family members of the availability of grants and scholarships and the appropriate steps that must be taken to apply for funding.
1.1.2 Maximize availability of Grants and Scholarships compared with Student Loans.
1.1.3 Frontload grants and scholarships to provide more support in the early years of college.
1.2 Loans
1.2.1 Provide emergency loans to students in need
1.2.2 Inform students & family members of availability and responsibilities related to Loans.
1.2.3 Streamline bureaucracy & forms to simplify the application process.
1.2.4 Frontload loan payments to provide more support in the early years of college.
1.3 Assistantships & Work Studies
1.3.1 Increase availability of assistantships and work study programs for undergraduate and graduate students.
1.3.2 Increase faculty participation with regard to student assistantships.
1.3.3 Keep assistantships and work studies under 25 hours per week for full-time students.
1.3.4 Create Assistantships with towns, metropolitan areas, or businesses that provide a mechanism for work after graduation at loan forgiveness
1.3.5 Develop partnerships with local area business to forge work and research opportunities for students.
1.3.6 Attempt to design assistantships and work study programs on or close to campus.
1.4 Financial Counseling
1.4.1 Inform students and families of all available options related to the financing of college.
1.4.2 Train financial counselors to be sensitive to issues related to race and ethnicity.
1.4.3 Provide money management training to students and families.

APPENDIX A-2
Institutional Components for Student Persistence

Recruitment & Admissions
2.1 Student Identification
2.1.1 Work with pre-college programs to identify potential recruits.
2.1.2 Monitor the participation of students enrolled in pre-college programs.
2.1.3 Attempt to match student academic and career goals with the institutional mission of the campus.
2.1.4 Use work study and teacher prep students to make visitations to middle and high schools to recruit students, and inform students about the need for study skills, good academic preparation, and advantage of taking AP courses
2.1.5 Develop and focus outreach programs on the prime-targeted population of the university.
2.1.6 Further coordinate recruitment with the Alumni association to identify future students
2.2 Admissions
2.2.1 Incorporate portfolios, interviews, and other non-cognitive assessments
2.2.2 Reduce the weight of SAT, ACT, and other tests
2.3 Orientation
2.3.1 Provide opportunities for pre-college students to live on campus.
2.3.2 Provide early orientation activities for families.
2.3.3 Involve all campus departments in the orientation process.
2.3.4 Provide satellite orientations for non-local students.
2.3.5 Ensure personal communications with students and families via phone and visitations.
2.3.6 Create freshman orientations that are required and for credit

APPENDIX A-3
Institutional Components for Student Persistence

Academic Services

3.1 Academic Advising

3.1.1 Provide academic advising and counseling for students on regular basis.

3.1.2 Provide appropriate training in academic advising for faculty.

3.1.3 Use faculty for the academic advising students when possible.

3.1.4 Keep log of student/faculty-staff interactions in a computerized monitoring system.

3.2 Supplementary Instruction

3.2.1 Encourage the use of peer study groups to foster learning and incorporate more labs with classwork.

3.2.2 Incorporate a variety of instructional methods to support student learning.

3.2.3 Utilize peers as instructional personnel for supplementary instruction when possible to assist students.

3.2.4 Offer supplementary courses that focus on academic support skills (e.g., study skills, note taking, listening, writing, reading, time management) and academic content (e.g., biology, calculus, etc.).

3.2.5 Monitor all supplementary instruction activities by students and log into the computerized database.

3.3 Tutoring/Mentoring

3.3.1 Provide regularly scheduled and easy access tutoring for students with regard to course work.

3.3.2 Use Research Assistants (RA), Teaching Assistants (TA), and exemplary undergraduates as tutors.

3.3.3 Encourage faculty to support the academic needs of students outside of class time.

3.3.4 Encourage peer tutoring and group studying within class population.

3.3.5 Create reward structure for faculty involvement as mentors

3.3.6 Identify and encourage the identification and use of minority students, faculty, and staff as mentors for students.

3.4 Research Opportunities

3.4.1 Support faculty to work with students on research projects.

3.4.2 Integrate regular research activities into curricula.

3.4.3 Develop industry partners for research opportunities.

3.4.4 Encourage business and industry to participate on campus through in-class demonstrations and experiments.

3.5 Pre-College Programs

3.5.1 Develop pre-college programs at the elementary and secondary education levels.

3.5.2 Monitor student progress in pre-college programs.

3.5.3 Offer pre-college programs on and off-campus.

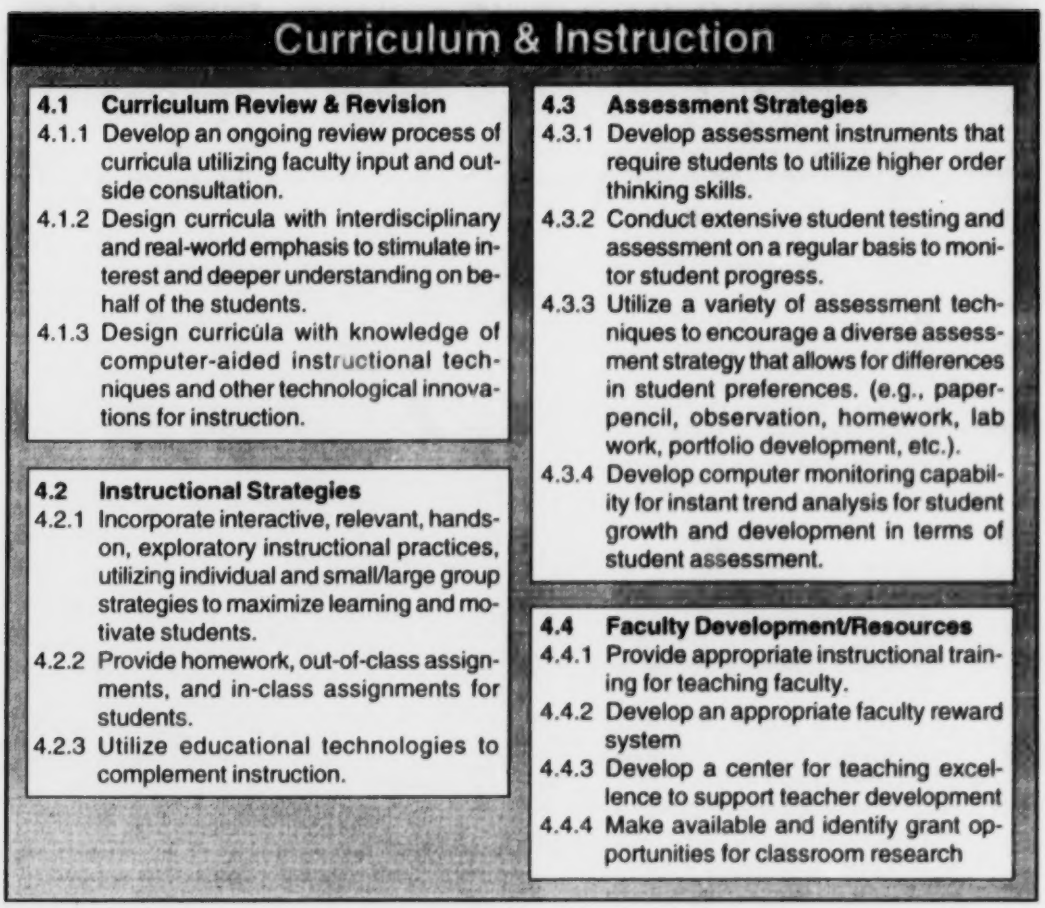
3.6 Bridging Programs

3.6.1 Provide on-campus residency for students during bridging programs.

3.6.2 Provide summer academic and social support for admitted students before the commencement of the freshman year.

3.6.3 Monitor all student progress in bridging programs.

APPENDIX A-4
Institutional Components for Student Persistence


Curriculum & Instruction
4.1 Curriculum Review & Revision
4.1.1 Develop an ongoing review process of curricula utilizing faculty input and outside consultation.
4.1.2 Design curricula with interdisciplinary and real-world emphasis to stimulate interest and deeper understanding on behalf of the students.
4.1.3 Design curricula with knowledge of computer-aided instructional techniques and other technological innovations for instruction.
4.2 Instructional Strategies
4.2.1 Incorporate interactive, relevant, hands-on, exploratory instructional practices, utilizing individual and small/large group strategies to maximize learning and motivate students.
4.2.2 Provide homework, out-of-class assignments, and in-class assignments for students.
4.2.3 Utilize educational technologies to complement instruction.
4.3 Assessment Strategies
4.3.1 Develop assessment instruments that require students to utilize higher order thinking skills.
4.3.2 Conduct extensive student testing and assessment on a regular basis to monitor student progress.
4.3.3 Utilize a variety of assessment techniques to encourage a diverse assessment strategy that allows for differences in student preferences. (e.g., paper-pencil, observation, homework, lab work, portfolio development, etc.).
4.3.4 Develop computer monitoring capability for instant trend analysis for student growth and development in terms of student assessment.
4.4 Faculty Development/Resources
4.4.1 Provide appropriate instructional training for teaching faculty.
4.4.2 Develop an appropriate faculty reward system
4.4.3 Develop a center for teaching excellence to support teacher development
4.4.4 Make available and identify grant opportunities for classroom research

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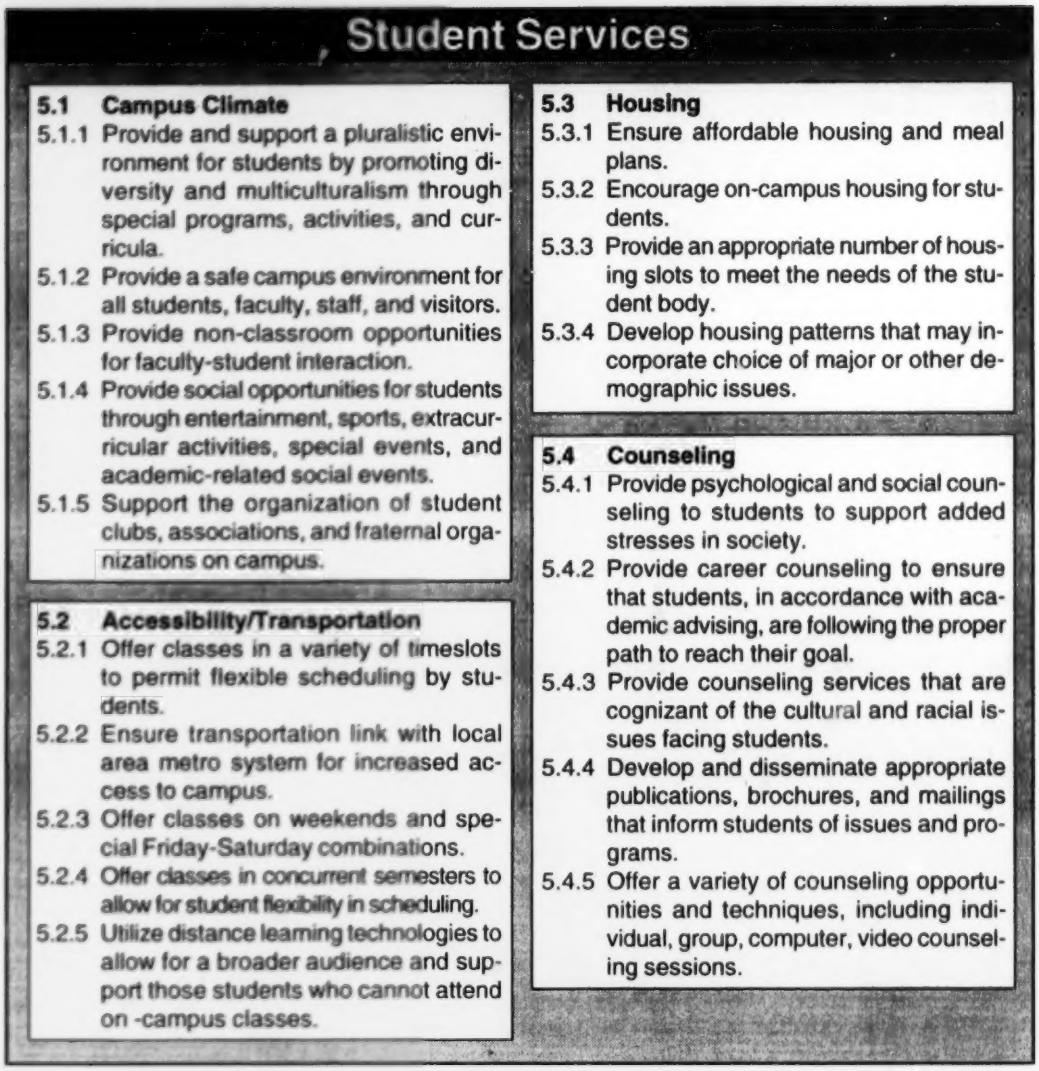
APPENDIX A-5
Institutional Components for Student Persistence


Student Services
5.1 Campus Climate
5.1.1 Provide and support a pluralistic environment for students by promoting diversity and multiculturalism through special programs, activities, and curricula.
5.1.2 Provide a safe campus environment for all students, faculty, staff, and visitors.
5.1.3 Provide non-classroom opportunities for faculty-student interaction.
5.1.4 Provide social opportunities for students through entertainment, sports, extracurricular activities, special events, and academic-related social events.
5.1.5 Support the organization of student clubs, associations, and fraternal organizations on campus.
5.2 Accessibility/Transportation
5.2.1 Offer classes in a variety of timeslots to permit flexible scheduling by students.
5.2.2 Ensure transportation link with local area metro system for increased access to campus.
5.2.3 Offer classes on weekends and special Friday-Saturday combinations.
5.2.4 Offer classes in concurrent semesters to allow for student flexibility in scheduling.
5.2.5 Utilize distance learning technologies to allow for a broader audience and support those students who cannot attend on -campus classes.
5.3 Housing
5.3.1 Ensure affordable housing and meal plans.
5.3.2 Encourage on-campus housing for students.
5.3.3 Provide an appropriate number of housing slots to meet the needs of the student body.
5.3.4 Develop housing patterns that may incorporate choice of major or other demographic issues.
5.4 Counseling
5.4.1 Provide psychological and social counseling to students to support added stresses in society.
5.4.2 Provide career counseling to ensure that students, in accordance with academic advising, are following the proper path to reach their goal.
5.4.3 Provide counseling services that are cognizant of the cultural and racial issues facing students.
5.4.4 Develop and disseminate appropriate publications, brochures, and mailings that inform students of issues and programs.
5.4.5 Offer a variety of counseling opportunities and techniques, including individual, group, computer, video counseling sessions.

APPENDIX B

Instructional Expenditures: This category includes general academic instruction, occupational and vocational instruction, special session instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students.

Academic Support Expenditures: This category includes expenditures for the support services that are an integral part of the institution's primary mission of instruction, research, or public service, including expenditures for libraries, museums, galleries, audio/visual services, academic computing support, ancillary support, academic administration, personnel development, and course and curriculum development.

Student Services Expenditures: This category includes funds expended for admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of formal instruction, including expenditures for career guidance, counseling, financial aid administration, and student health services.

Scholarships and Fellowships: This category includes all expenditures given in the form of outright grants and trainee stipends to individuals enrolled in formal course work, as well as aid to students in the form of tuition remission.

REFERENCES

Astin, A.W. 1977. *Four Critical Years*. San Francisco, CA: Jossey-Bass, Inc.

Beal, P.E. and L. Noel. 1980. *What Works in Student Retention*. Iowa City, IA: American College Testing Program.

Bean, J. P. 1986. "Assessing and Reducing Attrition." *New Directions for Higher Education* 14(1): 47-61.

Beanblossom, G. and B. R. Rodriguez. 1989. *Characteristics of Stafford Loan Program Defaulters: A National Study*. Washington: U.S. Department of Education, Office of Student Financial Assistance.

Conner, D, R. Saab, and K. Cicmanec. 1997. *Federal Student Loans Programs Data Book, FY 94 - FY 96*. Washington: U. S. Department of Education.

Davis, J. S. 1990. Correspondence with Gisela Vallandigham, August 30.

Davis, J. S. And L. G. Knapp. 1990. "How Federal Subsidies to the Stafford Loan Program Are Distributed Among Pennsylvania Borrowers." *Journal of Student Financial Aid*, 20(3): 24-43.

General Accounting Office. 1989. *Guaranteed Student Loans: Analysis of Student Default Rates at 7,800 Postsecondary Schools*. GAO/HRD-89-63BR. Washington: U.S. General Accounting Office, 1989.

_____. 1998. Student Loans: *Characteristics of Students and Default Rates at Historically Black Colleges and Universities*. GAO/HEHS-98-90. Washington: U.S. General Accounting Office.

Merisotis, J.P. 1988. "Default Trends in Major Postsecondary Education Sectors." *Journal of Student Financial Aid*. 18 (3): 18-28, .

Swail, W. S. 1995. "The Development of a Conceptual Framework to Increase Student Retention in Science, Engineering, and Mathematics Programs at Minority Institutions of Higher Education." Ed.D. dissertation, The George Washington University.

Tinto, V. 1975. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research" *Review of Educational Research*, 45: 89-125.

ENDNOTES

[1] Data extracted from the National Postsecondary Student Aid Study (NPSAS) 1995-96.

[2] Although there were 98 HBCUs in existence during this study period, this analysis was limited to the 80 HBCUs that had four-year undergraduate programs.

[3] Given the lag structure in the general model, non-cohort default rate data were also collected for the 1984 to 1987 period.

[4] The elasticities that appear in Tables 2-7 are from the models with the greatest explanatory power. However, since the "admissions" variable is categorical, the concept of an elasticity is undefined. As such, this number represents the reduction in the default rate associated with moving from one level of institutional undergraduate admissions selectivity to the next higher level.

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